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(72) Inventors; and

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

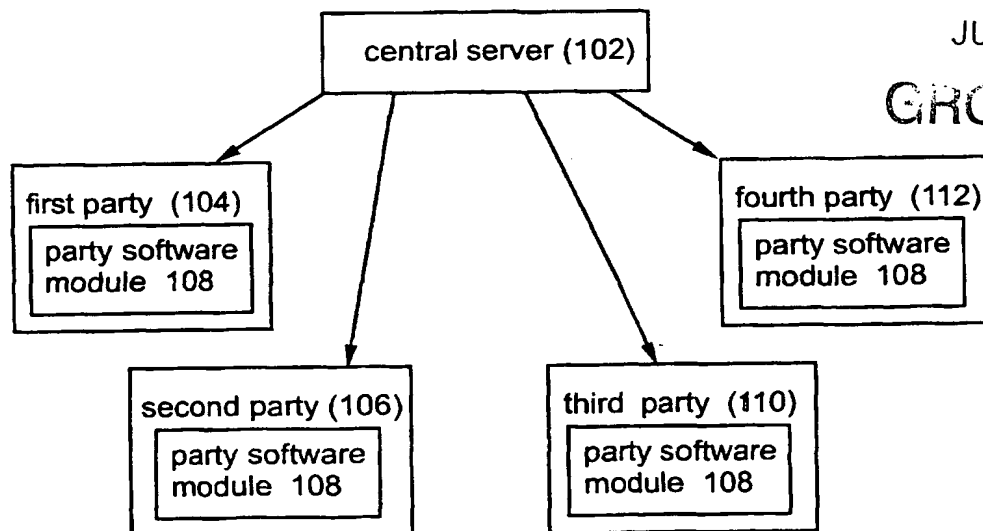
[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR AUTOMATED CONTRACT FORMATION

RECEIVED

JUL 03 2002

GROUP 3600



WO 01/16665 A3

(57) Abstract: A system, method and device for (semi-)automated e-commerce on the Internet, the WWW and other networks. Trading parties (104, 106, 110, 112) present intentions, made of more elementary components, which are used to express their willingness to engage in deals subject to constraints. Parts of intentions may be variable components. Some variable components may be associated with computational devices that transform them, optionally communicating via messages, into more specified components. This mechanism encodes business rules. By fitting intentions, contracts are formed. While fitting intentions, negotiations are carried out via the exchange of messages. Negotiations are automated by encoding users' wishes as mathematical programs. Following the deal formation an optional deal improvement phase, in one-to-one mode or one-to-many mode, is carried out to improve the deal. The improvement phase may be based on a trading mechanism selected from an available collection of such mechanisms including such mechanisms as constructed by users of the system.



Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

11 April 2002

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: GAL EHRLICH
G.E. EHRLICH LTD.
GIBOR-SPORT BUILDING, 17 TH FLOOR
28 BEZALEL STREET
RAMAT GAN 52521 ISRAEL

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 00/20922	Date of Mailing (day/month/year) 07 FEB 2002
International application No. PCT/IL00/00516	International filing date (day/month/year) 29 AUGUST 2000
Applicant TECHNION RESEARCH AND DEVELOPMENT FOUNDATION LTD.	

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in rules 90 *bis* 1 and 90 *bis* 3, respectively, before the completion of the technical preparations for international publication.

Within **19 months** from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within **20 months** from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer VINCENT A. MILLER <i>James R. Matthews</i> <i>FM</i> Telephone No. (703) 308-1065
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 00/20922	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IL00/00516	International filing date (day/month/year) 29 AUGUST 2000	(Earliest) Priority Date (day/month/year) 31 AUGUST 1999
Applicant TECHNION RESEARCH AND DEVELOPMENT FOUNDATION LTD.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (See Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 11

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

NEW ABSTRACT

A system, method and device for (semi-) automated e-commerce on the Internet, the WWW and other networks. Trading parties (104, 106, 110, 112) present intentions. made of more elementary components, which are used to express their willingness to engage in deals subject to constraints. Parts of intentions may be variable components. Some variable components may be associated with computational devices that transform them, optionally communicating via messages, into more specified components. This mechanism encodes business rules. By fitting intentions, contracts are formed. While fitting intentions, negotiations are carried out via the exchange of messages. Negotiations are automated by encoding users' wishes as mathematical programs. Following the deal formation an optional deal improvement phase, in one-to-one mode or one-to-many mode, is carried out to improve the deal. The improvement phase may be based on a trading mechanism selected from an available collection of such mechanisms including such mechanisms as constructed by users of the system.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL00/00516**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) :G06F 17/60

US CL :705/26, 27, 37

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/26, 27, 37

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN, WEST, EAST

search terms: matching, negotioation, internet, compare, ...

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,924,082 A (SILVERMAN et al) 13 July 1999, col. 3-5	1-42
A	US 5,077,665 A (SILVERMAN et al) 31 December 1991, abstract.	1-42
A	US 5,136,501 A (SILVERMAN et al) 04 August 1992, abstract.	1-42
A	US 5,664,115 A (FRASER) 02 September 1997, abstract.	1-42
A	US 5,845,266 A (LUPIEN et al) 01 December 1998, abstract.	1-42
A	US 5,794,207 A (WALKER et al) 11 August 1998, abstract.	1-42

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 06 MARCH 2001	Date of mailing of the international search report 07 FEB 2002
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer <i>James R. Matthews</i> VINCENT A. MILLIN Telephone No. (703) 308-1065

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL00/00516

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,842,178 A (GIOVANNOLI) 24 November 1998, abstract.	1-42
A	US 4,903,201 A (WAGNER) 20 February 1990, abstract.	1-42

APPLICANT : DEALIGENCE
DOCKET : 00/20922
SERIAL NO.: IL00/00516
FILED : AUG 29, 2000
FOR : CONTRACT FORMATION



Receipt of the following papers is acknowledged by the U.S. Patent & Trademark Office as evidenced by the Mail Room Stamp:

PCT DEMAND AND APPLICANT CHANGE

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ US

CHAPTER II

PCT

DEMAND

#3

under Article 31 of the Patent Cooperation Treaty:
The undersigned requests that the International application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

For International Preliminary Examining Authority use only			
Identification of IPEA		Date of receipt of DEMAND	
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION		Applicant's or agent's file number 00/20922	
International application No. PCT/IL00/00516	International filing date (day/month/year) 29 August 2000 (29/08/00)	(Earliest) Priority date (day/month/year) 31 August 1999 (31/08/99)	
Title of invention System And Method For Automated Contract Formation			
Box No. II APPLICANT(S)			
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country)		Telephone No.:	
DEALIGENCE, INC. 30 Old Rudnick Lane Dover, Kent County Delaware 19901 USA		Facsimile No.:	
		Teleprinter No.:	
State (i.e. country) of nationality: USA		State (i.e. country) of residence: USA	
Name and address: (Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country)			
KONOPNICKI, David 2/23 Dubnov Street 32 205 Haifa Israel			
State (i.e. country) of nationality: ISRAEL		State (i.e. country) of residence: ISRAEL	
Name and address: (Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country)			
LEIBA, Liora 26/7 Naamat Street 34 670 Haifa Israel			
State (i.e. country) of nationality: ISRAEL		State (i.e. country) of residence: ISRAEL	
<input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.			

International application No.
PCT/IL00/00516

Sheet No. 2

Continuation of Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country)	
SHMUELI, Oded 178 Hapisga Street 36 001 Nofit Israel	
State (i.e. country) of nationality: ISRAEL	State (i.e. country) of residence: ISRAEL
Name and address: (Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country)	
SAGIV, Yehoshua 36/2 Elqahi Street East Talpyot 93 807 Jerusalem Israel	
State (i.e. country) of nationality: ISRAEL	State (i.e. country) of residence: ISRAEL
Name and address: (Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country)	
State (i.e. country) of nationality:	State (i.e. country) of residence:
Name and address: (Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country)	
State (i.e. country) of nationality:	State (i.e. country) of residence:
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.	

International application No.
PCT/IL00/00516

Sheet No. 3

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The following person is ☒ agent ☐ common representative
and ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination
☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.
☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.

Name and address: *(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country)*

EHRLICH, Gal
C/O ANTHONY CASTORINA
2001 JEFFERSON DAVIS HIGHWAY, SUITE 207
ARLINGTON, VA 22202, USA

Telephone No.:
703-4151581

Facsimile No.:
703-4154864

Teleprinter No.:

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No. IV STATEMENT CONCERNING AMENDMENTS

The applicant wishes the International Preliminary Examining Authority *

- (i) ☒ to start the international preliminary examination on the basis of the international application as originally filed.
(ii) ☐ to take into account the amendments under Article 34 of
 ☐ the description (amendments attached).
 ☐ the claims (amendments attached).
 ☐ the drawings (amendments attached).
(iii) ☐ to take into account any amendments of the claims under Article 19 filed with the International Bureau (a copy is attached)
(iv) ☐ to disregard any amendments of the claims made under Article 19 and to consider them as reversed.
(v) ☐ to postpone the start of the international preliminary examination until the expiration of 20 months from the priority date unless that Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Box No. V ELECTION OF STATES

- ☐ The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)* except.....

(if the applicant does not wish to elect certain eligible States, the name(s) or country code(s) of those States must be indicated above.)

International application No.
PCT/IL00/00516

Sheet No. 4

Box No. VI CHECK LIST

The demand is accompanied by the following documents for the purposes of international preliminary examination:

For International Preliminary
Examining Authority use only

received not received

amendments under Article 34
description : sheets
claims : sheets
drawings : sheets

☐ ☐
☐ ☐
☐ ☐

2. letter accompanying amendments
under Article 34 : sheets

☐ ☐

3. copy of amendments under Article 19 : sheets

☐ ☐

4. copy of statement under Article 19 : sheets

☐ ☐

5. other (specify) : sheets

☐ ☐

The demand is also accompanied by the item(s) marked below:

1. ☒ separate signed power of attorney
2. ☐ copy of general power of attorney
3. ☐ statement explaining lack of signature
4. ☒ fec calculation sheet
5. ☐ other (specify):

Box No. VII SIGNATURE OF APPLICANT, OR AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

AGENT : EHRLICH, Gal

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:
2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):
3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply. ☐ The applicant has been informed accordingly.
4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5
5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

Demand received from IPEA on:


For International Bureau use only

CHAPTER II

PCT

FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

International application No. PCT/IL00/00516 Applicant's or agent's file reference 00/20922	For International Preliminary Examining Authority use only Date stamp of the IPEA
Applicant DEALIGENCE, INC. et al	
1. Preliminary examination fee 490.00 P	
2. Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i> 137.00 H	
3. Total prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box.....	627.00 TOTAL
Mode of Payment <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below) <input type="checkbox"/> cheque <input type="checkbox"/> postal money order <input type="checkbox"/> bank draft </div> <div> <input type="checkbox"/> cash <input type="checkbox"/> revenue stamps <input type="checkbox"/> coupons <input type="checkbox"/> other (specify): </div> </div>	
Deposit Account Authorization <i>(this mode of payment may not be available at all IPEAs)</i> The IPEA/ <u>US</u> <input checked="" type="checkbox"/> is hereby authorized to charge the total fees indicated to my deposit account. <input checked="" type="checkbox"/> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.	
50-1407 Deposit Account Number	March 15, 2001 Date (day/month/year)
Signature 	

00/20922

ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned:

Technion Research And Development Foundation Ltd.
Senate House
Technion City
32 000 Haifa
Israel

hereby sell(s), assign(s) and transfer(s) to:

Dealigence, Inc.
30 Old Rudnick Lane
Dover, Kent County
Delaware 19901
USA

(hereinafter called the "Assignee"), its successors, assigns, nominees or other legal representatives, the undersigned's entire rights, title and interest in and to the invention titled:

System And Method For Automated Contract Formation

described and claimed in the following Patent Application:

PCT Patent Application No. PCT/IL00/00516 filed on: August 29, 2000
identified as Attorney Docket No. 00/20922

and in and to said Patent Application, and all original and reissued Patents granted therefore, and all divisions and continuations thereof, any corresponding PCT Patent Application and the National Phases thereof, including the right to apply and obtain Patents in all other countries, the priority rights under International Conventions, and the Letters Patent which may be granted thereon;

covenant that the undersigned have (has) the full right to convey the entire interest therein assigned;

authorize(s) and request(s) the Registrar of Patents, and any Official of any country whose duty it is to issue Patents on applications as aforesaid, to issue the said Letters Patent to the said Assignee;

and agree(s) to sign all lawful papers, make all rightful oaths, do all lawful acts requisite for such Patent Applications, and do everything possible to aid said Assignee to apply for, obtain and enforce Patent protection for said invention.

Technion Research And Development Foundation Ltd.

Signature :

Name :

Capacity :

Date :

Technion Research and Development Foundation Ltd.
Technion City - Haifa 32 000 Israel

AVISHAI TZUR
DIRECTOR

BUSINESS DEVELOPMENT & FINANCIAL CONTROL DIVISION

[Signature]
Managing Director
MARCH 15, 2001